

Ancient and Notable Trees of Japan: Then and Now

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Ernest Henry Wilson (1876–1930) visited Japan in 1914–1915 to collect woody plants for the Arnold Arboretum, principally conifers, azaleas and cherries. Many of the special plants that he brought back to the United States are still widely cultivated. During this expedition he photographed hundreds of trees and landscapes, which are now stored in the Arnold Arboretum archives and available online.

These photographs show the appearance of the trees and landscapes in Japan 93 years ago. In December 2006 and January 2007, we visited some of the same locations as Wilson, and tried to find the same trees. Most of the places that he visited were famous locations that were easy to track down. In most, but not all, cases the trees

were still alive. Other sites were not described in sufficient detail to be readily located.

These trees and places have been associated with some of the major events in Japanese history, so the trees can be regarded as “witness trees” that can tell a story. And the trees themselves have a history in terms of how they have grown and been taken care of through this time. Let’s now look at some of these trees as they were in the past and as they are today, starting with the famous Ship Pine of Kyoto.

The Ship Pine of Kyoto.

Kyoto was the capitol of Japan from A.D. 794 to 1185. Even after the government moved first to Kamakura and then Tokyo, Kyoto remained important to Japanese society for its many



The Ship Pine of Kyoto (Pinus parviflora) in 1914, photographed by E. H. Wilson (#AAE-00292 from the Arnold Arboretum Archives). Note the latticework supporting the prow.



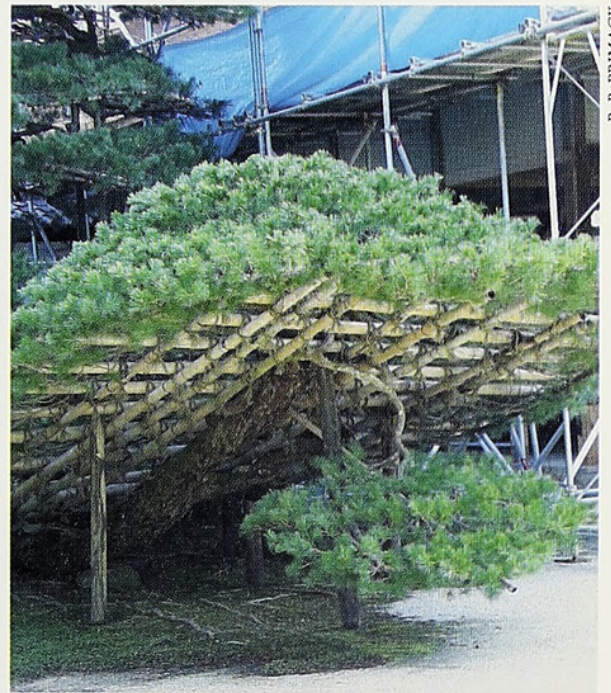
The Golden Temple of Kyoto. Photographed in 2007.

important Buddhist temples which are still in active use and frequently visited by foreign tourists. The most well known of these is Kinkakuji Temple, also known as the Golden Temple because of the stunning metallic-yellow color of its main shrine. A small pond acts as mirror in front of the temple, creating an added effect and rocks are positioned deliberately to create a seacoast effect. This coastal imagery is further enhanced by the nearby Ship Pine, a white pine (*Pinus parviflora* Sieb. & Zucc.), known in Japanese as the "Rikushu-no-matsu", and is one of three famous pines in Kyoto. This tree was originally a bonsai trained in the shape of a ship, and belonged to the Shogun, or military ruler, Ashikaga, who was a great patron of the Temple.

After the Shogun's death in the mid-1300s, the ship pine was planted at this spot approximately 650 years ago. One of Wilson's photos from 1914 shows the tree planted in front of temple buildings. The lower branches have been trained in the shape of the hull and prow of a sailing ship, supported by a bamboo frame. The trunk of the tree appears as the mast, with approximately 22 side branches trained



The Ship Pine in 2007.



Bamboo latticework supporting the prow of the Ship Pine. Photographed in 2007.

as short, flattened surfaces suggesting sails. The horizontal branches are also supported by a framework of bamboo. Careful pruning of shoots over hundreds of years have been needed to create this precise shape.

Today the buildings in the background are still the same, showing the tree has remained in the same place, though the large building to the right is being renovated. The tree is approximately 20 feet (6 m) high and 30 feet (9 m) long. The horizontal "sail" branches and "prow" are still supported by bamboo frames. The Ship Pine is evidently in good health and essentially the same in shape after more than ninety years. The present pruning regime appears to be less precise than before, with the outlines of the prow and sails now appearing more diffuse.

The Shogun's Ginkgo Tree

The site of the present day Koishikawa Botanical Gardens, Graduate School of Science, The University of Tokyo was originally the medici-

nal plant garden of the Tokugawa Shogun, the military ruler that unified Japan in 1603. The large *Ginkgo* tree that grows there was planted approximately 300 years ago. In 1868 ownership of the garden was transferred from the Shogun to the new imperial Meiji government. This government was unpopular with many of the samurai, the traditional military class of Japan, because the Meiji government was eliminating their hereditary privileges in its drive to bring Japan into the modern age. To demonstrate their dislike of the new government, the samurai cut down some of the large trees on the day before the transfer was to take place. They started to cut down this ginkgo tree but did not complete their vandalism. However, even today evidence of the axe cuts remain at shoulder height on the trunk.

This tree is also linked to an important scientific discovery. In 1896, teaching assistant Sakugoro Hirase of the Botanical Institute of the Imperial University, using material collected from this tree, uncovered the previously



E. H. Wilson's photograph of the Shogun's Ginkgo from 1914 (#AAE-03304 from the Arnold Arboretum Archives).



The Shogun's Ginkgo tree in 2007.



E. H. Wilson's 1914 photograph of the black pine forest (*Pinus thunbergii*) on the Kamakura coast (#AAE-03392 from the Arnold Arboretum Archives).

unknown sexual secrets of this unusual gymnosperm. He discovered that the male gametophyte, when it is mature, releases two large spermatozoids with multiple flagella, one of which fertilizes the ovule. This was a widely reported scientific discovery at the time, and a plaque at the base of the tree commemorates this finding.

Today the tree looks remarkably similar to its appearance in Wilson's photograph. Only the branches on the left side are now somewhat more pendent than before. The current tree height of 80 feet is virtually unchanged since Wilson's visit. It is remarkable that the tree survived at all, as the site was heavily damaged by firebombs dropped by American aircraft in World War II. And from 1945 to 1955 much of the surrounding garden area was used to grow food for the devastated population.

Black Pines on the Kamakura Coast

One of Wilson's photos shows an elegant group of Japanese black pines (*Pinus thunbergii* Parl.) growing on the grounds of the Kaihin Hotel near the Kamakura seashore. The trees are



Only a few of the black pines from 1914 remain in 2007, surrounded by a parking lot.

being bent to the right by the sea-winds and salt spray.

Today the site is occupied by a tennis club. Sandwiched between tennis courts and houses, only four pine trees remain from the original stand, and have now become part of a parking lot. These trees are about 30 feet (9 m) tall



The Chinese linden (*Tilia miqueliana*) growing on a hillside above Lake Biwa, photographed in 1914 by E. H. Wilson (#AAE-04480 from the Arnold Arboretum Archives).

and 6 feet (2 m) in girth, with the bottoms of their trunks encased in asphalt. The fate of this coastal pine stand is typical—less than 1% of the original coastal pine stands remain intact as these sites are prime sites for the residential and industrial development.

The Ancestor of Chinese Lindens in Japan

Most of Wilson's pictures show well-formed trees. In contrast, the pictures he took at the Takakannon Gonshoji Temple near Kyoto show a Chinese linden (*Tilia miqueliana* Maxim.) with a massive knobby trunk, ending abruptly at perhaps 10 to 12 feet (3.7 m) high, out of which grows a dozen or so shoots. Behind the tree is a flattened ledge with benches. In the distance, a town can be viewed below with an indistinct horizon. According to the litera-



The Chinese linden in 2007.

ture at the site, this tree was carried to Japan as a sapling by a Buddhist priest from China named Eshinsozu, who founded the temple in 904 A.D. This story would make the tree over 1100 years old. In Japan, the Chinese linden tree is held sacred to Buddhists in the same way that the Bo tree is held sacred by Buddhists elsewhere in tropical Asia. According to local tradition, this particular tree is not only the oldest Chinese linden tree in Japan, but it is regarded as the probable parent tree of all Chinese linden trees in Japan. Even today, pilgrims to the temple stop to collect seeds from this tree to plant back home.

The temple remains today perched on a steep hillside, above the pale blue waters of Lake Biwa, the largest lake in Japan. On the flat ground between the hills and the lake, lies

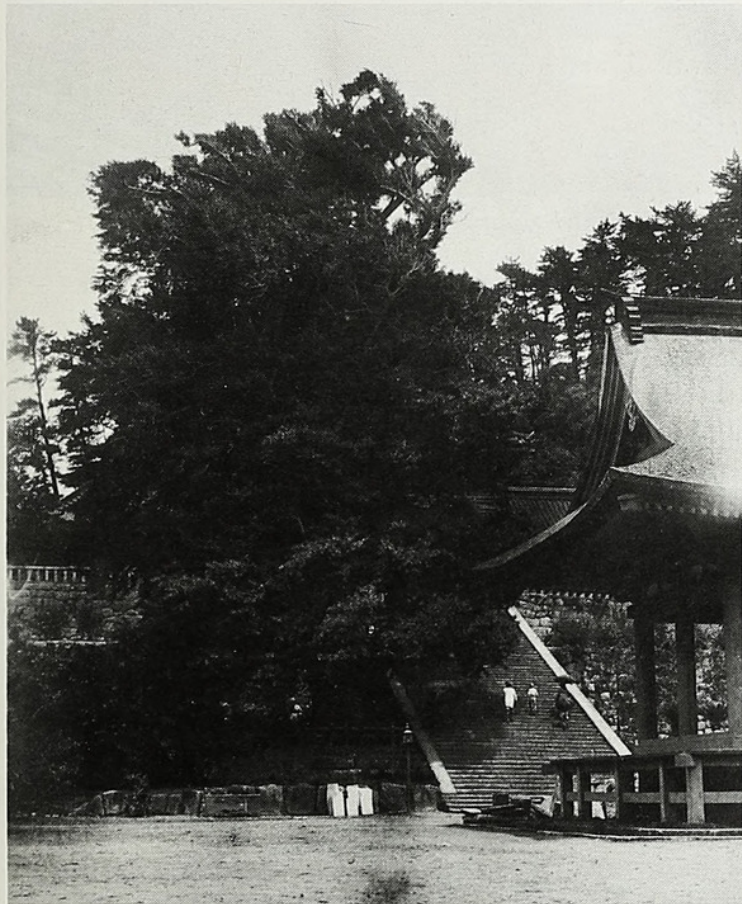
the densely settled town of Otsu, though now with more tall buildings than shown in the old photo. Right in front of the temple is the same Chinese linden tree shown in the Wilson photos, but without the massive trunk. The 15 foot (5 m) tall tree consists of 16 vigorous shoots, the largest of which are covered with the distinctive helicopter-like fruit. A local resident told us that 40 years ago a typhoon broke off the trunk and washed away the bank beyond the tree. The tree base re-sprouted, as is typical for lindens, forming the tree that we see today, which is now on the edge of the road.

The Giant *Ginkgo* at the Tsurugaoka Hachimangu Shrine in Kamakura

A massive ginkgo tree, in full leaf is shown in this photo from July 28, 1905, taken by John George Jack, another collector who worked for the Arnold Arboretum. To the right of the tree is a wide set of stairs leading upward to the Tsu-

ruagaoka Hachimangu Shrine, which is above and out of sight. There is a courtyard in the foreground and a traditional building on the right. A second picture shows a Japanese man standing between the base of the tree and the stairway. The immense size of the tree is indicated by the relative size of people in both pictures.

On January 2, 2007, the courtyard was packed with a dense crowd of people waiting to visit the shrine to say their New Year's prayers. Afterwards they buy a "Omikuji", or written prediction for the coming year, and have the chance to buy a special white arrow called "Hamaya" for keeping away unhappiness. Police and special officials were carefully regulating traffic up the temple steps to prevent injuries. As a result, we were unable to measure the size of the tree. A sign at the base of the tree today states that it is over 1000 years old, approximately 100 feet (32 m) tall and 23 feet (7 m) in girth. The ginkgo tree still dominates the courtyard area, though



The giant Ginkgo tree at the Tsurugaoka Hachimangu Shrine, photographed by J. G. Jack in 1905 (#AAE-00114 from the Archives of the Arnold Arboretum).



The giant Ginkgo at the New Year's celebration in 2007.



The base of the giant Ginkgo at the Tsurugaoka Hachimangu Shrine, photographed by J. G. Jack in 1905 (#AAE-00115 from the Arnold Arboretum Archives).



The base of the giant Ginkgo tree in 2007.

on this winter day the tree was leafless. The tree had been heavily pruned recently to help it regain a symmetrical shape following heavy typhoon damage three years ago. The trunk was encircled by a stylized rice straw rope called "Shimenawa", a traditional symbol showing the boundary of the shire sanctuary.

Giant Witness *Ginkgo* in Tokyo

In the crowded, chic Tokyo neighborhood of Azabu stands the Zempukuji Temple, founded in 824 A.D. According to legend, a famous Buddhist priest visited the temple in 1232 A.D. and planted his staff in the ground. The staff later put forth buds and grew into the giant *Ginkgo* tree photographed in 1914 by Wilson. The tree was declared a national monument in 1926, and is among the oldest in Tokyo. Wilson records it as being 50 feet (16 m) in height and 30 feet (9 m) in diameter, which is probably close to its

size today. The tree has seen lots of history: in 1859, the Temple was used as the first American embassy in Japan, and the assistant ambassador was assassinated nearby by angry samurai just few years later.

The basic shape of the tree is still the same as it was in the past. The main trunk is apparently formed by the fusion of multiple trunks which then broke off about 12 feet (4 m) from the ground. A secondary trunk formed from this main trunk, and was itself later broken off at about 36 feet (12 m) from the ground. There are now about ten additional secondary trunks developing both from the top of the trunk and the base of the tree. Many of the older branches are covered with "chichis" or "hanging breasts." These stalactite-like structures are downward growing shoots that are typical of ancient ginkgos throughout Asia. Some of these chichis are quite impressive, measuring more



The Ginkgo tree at Zenpukuji Temple in Tokyo, as photographed by E. H. Wilson (#AAE-03739 from the Arnold Arboretum Archives).

R. B. PRIMACK



The massive trunk of the Zenpukuji Ginkgo in 2007.

R. B. PRIMACK



The cemetery grounds in 2007 with the Ginkgo in the background and a statue of a Buddhist priest to the left.



An unusual side branch of the Zenpukuji Ginkgo showing its prominent chichis (Wilson photo #AAE-03700 from the Arnold Arboretum Archives).

R. B. PRIMACK



The unusual side branch, shown above, photographed in 2007.

than 6 feet (2 m) in length and 15 inches (37 cm) in diameter at the base. The trunk has many rotting holes and a bamboo is sprouting from the top of the split trunk. During World War II, the tree trunk was badly damaged by bombs, with burn marks still visible on the trunk.

In Wilson's photo, the area around the tree appears to be fairly open. However, today there is a wall blocking the view to the temple buildings on the left, there are trees planted in the courtyard, and there is a profusion of grave-stones. Facing the main entrance to the cemetery is a greenish copper statue of a Buddhist priest, with a large sign that requests visitors to go to the temple to make a donation before paying their respects at family gravestones.

The Ghosts of Ancient Trees at Nara

Wilson photographed a series of ancient trees in Nara, the former capital near Kyoto. Nara Park near the city center is filled with winding paths, temples, and gardens. The park has a peculiar quality because of large numbers of tame deer that roam freely, and the black plastic netting which covers many tree trunks to prevent deer from stripping off the bark. We readily located the Kofukuji Temple and pagoda where a magnificent black pine had grown before and was photographed by Wilson. According to tradition, this tree was planted in the 9th century. Unfortunately the tree was gone, and a memorial plaque announced that the tree had died in 1937.

We next visited a bridge extending over a ravine, with a small shrine on the right side. A Wilson photo shows a giant Sugi tree (*Cryptomeria japonica* (L. f.) D. Don) on the left. On the right side a Chinese juniper (*Junipers chinensis* L.) leans slightly to the right with a Sugi tree growing out of its split trunk, and leaning slightly to the left. In 2007, the scene looked surprisingly similar, except that the damaged bridge is now being supported by a network of poles. Unfortunately all three trees are now dead though their trunks are still visible; two poles support the leaning trunk of the juniper tree.

The final Wilson picture from Nara shows a massive oak (*Quercus gilva* Blume), described as 90 feet (27.4 m) in height and 30 feet (9.1 m) in diameter. The tree has large buttresses



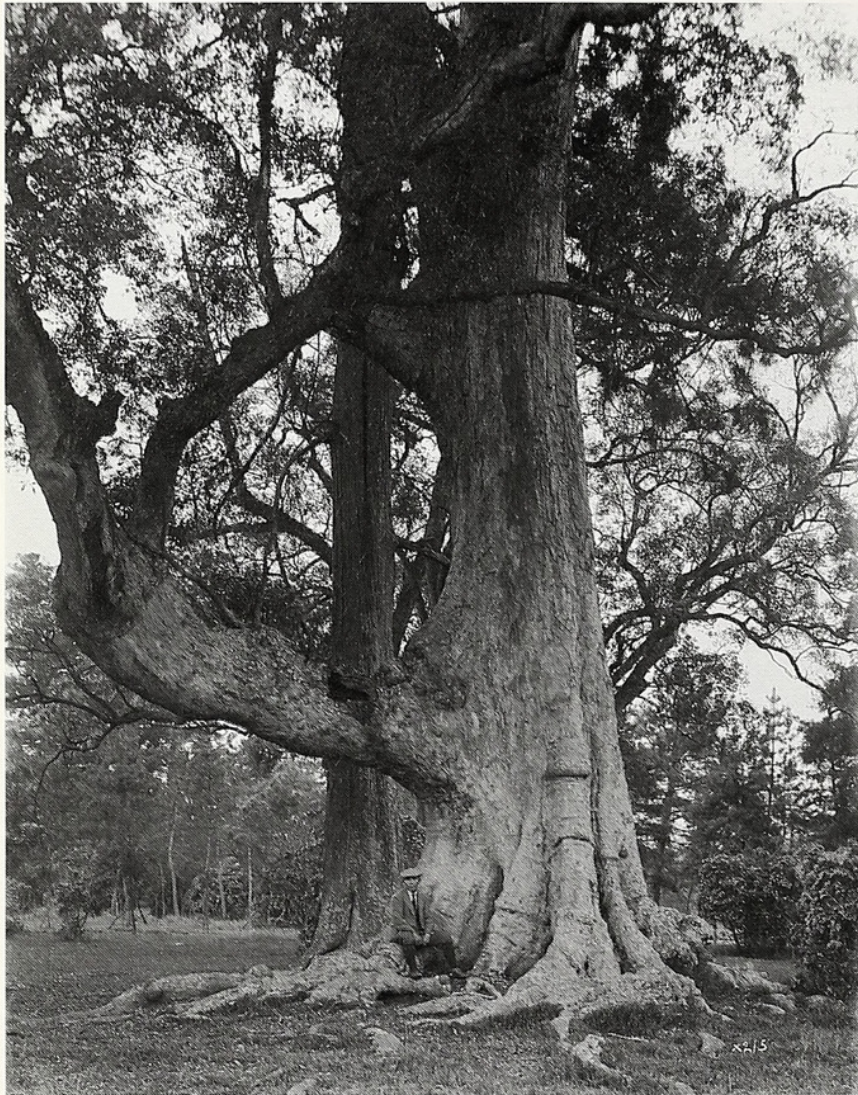
The magnificent pine of Nara photographed by E. H. Wilson in 1914 (#AAE-03350 from the Arnold Arboretum Archives). The tree died in 1937.



The bridge and shrine at Nara with the two Cryptomerias and one Juniper photographed by E. H. Wilson in 1914 (AAE-03351 from the Arnold Arboretum Archives).



The Cryptomeria bridge in 2007 with the trunks of the dead trees still standing on either side of the small red hut.



A massive *Quercus gilva* at Nara photographed by E. H. Wilson in 1914 (#AAE-03359 from the Arnold Arboretum Archives).



The presumed stump of Wilson's *Quercus gilva*, with massive buttresses similar to the ones visible in the original photo.

coming out from the trunk and sweeping to the left. After considerable searching failed to locate this distinctive tree, we did locate a huge tree stump cut off at about 3 feet (1 m) from the ground. Based on the sheer size of the stump and the distinctive buttresses still present, this is almost certainly the remains of this ancient tree. In the end, none of the ancient trees from Nara that Wilson photographed are still alive.

Japanese White Pines on the Rocky Island in Lake Towada

The Ebisudaikoku Island is named after two shrines, Ebisu and Daikokuten. They are the gods of wealth and commerce, two of the seven deities of good fortune. The island, which is located in Lake Towada, in northern Honshu, originated as part of central cone of the Towada volcanic caldera. On October 10, 1914, Wilson noted that Japanese white pine trees (*Pinus parviflora* S. & Z.) dominated the island and were between 45 to 50 ft (14–16 m) tall and 2 to 4 ft (0.6–1.3 m) in circumference. The pine canopies completely covered the Daikokuten shrine at that time and the understory vegetation was sparse. In today's photograph, taken on July 2, 2007, some of the past canopy trees have died. The heights of the pines that are still alive are remarkably similar to what they were in Wilson's day. The shrine buildings are now exposed to direct sunlight, and the understory shrubs are more abundant than in 1914. This is the typical pathway of vegetation succession following the death of canopy pines.

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Wilson's 1914 photograph of the Japanese white pines on the island in Lake Towada (#AAE-03642 from the Arnold Arboretum Archives).



The island in Lake Towada, photographed on July 2, 2007.



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